Abbey Village Primary

Progression in Science

At Abbey Village, our definition of progress is the widening and deepening of essential knowledge, skills, understanding and learning behaviours. We design, organise and sequence our mixed age curriculum to ensure that children are not merely covering content but achieving a depth to their learning which enables them to use their skills and understanding in all areas of the curriculum. This careful curriculum sequencing means that we build in opportunities to revisit previous learning, which allows them to build on their prior knowledge and gradually develop a deeper understanding of the skills and processes within subjects at their own pace and in the best possible way for each individual child.

Science Progression	Foundation (Sequence towards KS1)	KS1 (Sequence Towards Lower Ks2)		Lower ks2 (Sequence towards upper Ks2)		Upper Ks2 (Sequence towards the end of KS2)	
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals Including Humans	• Children know about similarities and differences in relation to living things. • They make observations and drawings of living things and explain why some things occur, and talk about changes. • Know about similarities and differences in relation to living things. • Explore the natural world around them.	• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • Describe and compare the structure of a variety of common animals (fish, amphibians,	• Notice that animals, including humans, have • offspring which grow into adults • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	• Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	• Describe the simple functions of the basic parts of the digestive system in humans • Identify the different types of teeth in humans and their simple functions • Construct and interpret a variety of food chains, identifying producers, predators and	• Describe the changes as humans develop to old age	• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • Describe the ways in which

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		reptiles, birds and mammals, and including pets). • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.			prey		nutrients and water are transported within animals, including humans.
Plants	• They make observations and drawings of plants and explain why some things occur, and talk about changes. • They talk about the features of their own immediate environment and how environments might vary from one another. • Know some similarities and differences	• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.(Y1) • Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1) • Observe and describe how seeds and bulbs grow into mature plants. (Y2) • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy *(and how changing these affects the plant). .(Y2)*		• Identify, locate and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **(Year 3)**			

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	between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.				
Science Progression	**Foundation (Sequence towards KS1)**	**KS1 (Sequence Towards Lower Ks2)**		**Lower ks2 (Sequence towards upper Ks2)**		**Upper Ks2 (Sequence towards the end of KS2)**	
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Everyday Materials	• Children know about similarities and differences in relation to objects and materials. • They make observations explain why some things occur, and talk about changes. • Understand some important processes and changes in the	• Distinguish between an object and the material from which it is made.(Y1) • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, rock *(and brick, paper and cardboard). .(Y1)* • Describe the simple physical properties of a variety of everyday materials. .(Y1) • Compare and group together a variety of everyday materials on the basis of their simple physical properties. .(Y1) • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, water, rock, paper and					

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	natural world • around them, including the seasons and changing states of matter.	cardboard for particular uses. .(Y2) • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (applying a force) .(Y2)				
Science Progression	**Foundation (Sequence towards KS1)**	**KS1 (Sequence Towards Lower Ks2)**		**Lower ks2 (Sequence towards upper Ks2)**		**Upper Ks2 (Sequence towards the end of KS2)**	
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Seasonal Changes	• Children know about similarities and differences in relation to places. • They talk about the features of their own immediate environment and how environments might vary from one another. • They make observations and explain why some things	• Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies (Y1)		•	•		

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	occur and talk about changes.					
Living Things and Their Habitats		• Explore and compare the differences between things that are living, dead, and things that have never been alive. • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. • Identify and name a variety of plants and animals in their habitats, including micro-habitats. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. • (Y 2)		• Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • Construct and interpret a variety of food chains, identifying producers, predators and prey. • Recognise that environments can change and that this can sometimes pose dangers to living things. (Year 4 objectives)	• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • Describe the life process of reproduction in some plants and animals.	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics.
Rocks				• Compare and group together different kinds of rocks on the basis of their appearance and simple physical	•	•

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				properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise that soils are made from rocks and organic matter (Year 3 objectives)		
Light				• Recognise that they need light in order to see things and that dark is the absence of light. • Notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by a solid object • Find patterns in the way that the size of shadows can change (Year 3 objectives)	• Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (Year 6 objectives)	
Science Progression	**Foundation (Sequence**	**KS1 (Sequence Towards Lower Ks2)**		**Lower ks2 (Sequence towards upper Ks2)**	**Upper Ks2 (Sequence towards the end of KS2)**	

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	towards KS1)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Forces and Magnets				• Compare how some things move on different surfaces. • Notice that some forces need contact between two objects but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. • Describe magnets as having two poles *(like and unlike poles).* • Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Year 3 objectives)		• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effects of air resistance, water resistance and friction that act between moving surfaces. • Friction, air resistance and water resistance are forces which slow down moving objects. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.(Year 5 Objectives)	
Science Progression	**Foundation (Sequence towards KS1)**	**KS1 (Sequence Towards Lower Ks2)**		**Lower ks2 (Sequence towards upper Ks2)**		**Upper Ks2 (Sequence towards the end of KS2)**	
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
States of Matter				• Compare and group materials together, according to whether they are solids, liquids or gases			

Don't give up	**Try new things**	**Respect others**	**Concentrate**	**Be motivated**	**Improve**	**Imagine**	**Push yourself**

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				• Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.(Year 4 objectives)	
Sound				• Identify how sounds are made, associating some of them with something vibrating. • Recognise that vibrations from sounds travel through a medium to the ear. • Find patterns between the volume of a sound and the strength of the vibrations that produced it. • Recognise that sounds get fainter as the distance from the sound source increases. (Year 4 objectives)	
Electricity				• Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Identify whether or not a lamp will	• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and

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				light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp, lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors. (Year 4 objectives)		the on/off position of switches. • Use recognised symbols (at least: cells, wires, switches, bulbs, buzzers and motors) when representing a simple circuit in a diagram. • (Year 6 objectives)
Properties and changes of Materials						• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood

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						and plastic • Demonstrate that dissolving, mixing and changes of state are reversible changes • explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. **(Year 5 objectives)**	
Science Progression	**Foundation (Sequence towards KS1)**	**KS1 (Sequence Towards Lower Ks2)**		**Lower ks2 (Sequence towards upper Ks2)**		• **Upper Ks2** • **(Sequence towards the end of KS2)**	
		Year 1	**Year 2**	**Year 3**	**Year 4**	• **Year 5**	• **Year 6**
Earth and Space						• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system • Describe the movement of the Moon relative to the Earth • Describe the Sun, Earth and Moon as approximately spherical bodies • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky **(Year 5 objectives)**	
Science	**Foundation**	**KS1**		**Lower ks2**		• **Upper Ks2**	

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Progression	(Sequence towards KS1)	(Sequence Towards Lower Ks2)		(Sequence towards upper Ks2)		• (Sequence towards the end of KS2)	
		Year 1	Year 2	Year 3	Year 4	• Year 5	• Year 6
Evolution and Inheritance						• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution • **(Year 6 Objectives)**	
Scientific Enquiry Skills							
	EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Planning and Communication and Sources		• Draw simple pictures • Talk about what they see and do • Use simple charts to communicate findings • Identify key features ask	• Describe their observations using some scientific vocabulary • Use a range of simple texts to find information • Suggest how to find things out	• Use pictures, writing, diagrams and tables as directed by their teacher • Use simple texts, directed by the teacher, to find	• Record observations, comparisons and measurements using tables and bar charts • Begin to plot points to form a simple graph use graphs to point	• Record observations systematically • Use appropriate scientific language and conventions to communicate quantitative and qualitative data	• Choose scales for graphs which show data and features effectively • Identify measurements and observations

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		questions	• Identify key features ask questions	information • Record their observations in written, pictorial and diagrammatic forms • Select the appropriate format to record their observations	out and interpret patterns in their data • Select information from a range of sources provided for them	• Select a range of appropriate sources of information including books, internet	which do not fit into the main pattern • Begin to explain anomalous data • Use appropriate ways to communicate quantitative data using scientific language
Enquiring and Testing and Obtaining and Presenting Evidence		• Test ideas suggested to them say what they think will happen • Use first hand experiences to answer questions • Begin to compare objects and living things	• Use simple equipment provided to aid observation • Compare objects, living things or events • Make observations relevant to their task • Begin to recognise when a test or comparison is unfair • Use first hand	• Put forward own ideas about how to find the answers to questions • Recognise the need to collect data to answer questions • Carry out a fair test with support recognise and explain why it is a fair test • With help, begin to realise that	• With help, pupils begin to realise that scientific ideas are based on evidence • Show in the way they perform their tasks how to vary one factor while keeping others the same • Decide on an appropriate approach in their own investigations to	• Use previous knowledge and experience combined with experimental evidence to provide scientific explanations • Recognise the key factors to be considered in carrying out a fair test	• Describe evidence for a scientific idea • Use scientific knowledge to identify an approach for an investigation • Explain how the interpretation leads to new ideas

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			experiences to answer questions	scientific ideas are based on evidence	answer questions • Describe which factors they are varying and which will remain the same and say why		
	EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Observing and Recording		• Make observations using appropriate senses • Record observations • Communicate observations orally, in drawing, labelling, simple writing and using ICT	• Respond to questions asked by the teacher • Ask questions collect and record data (supported by the teacher) • Suggest how they could collect data to answer questions • Begin to select equipment from a limited range	• Make relevant observations • Measure using given equipment • Select equipment from a limited range	• Carry out measurement accurately • Make a series of observations, comparisons and measurements • Select and use suitable equipment • Make a series of observations and measurements adequate for the task	• Make a series of observations, comparisons and measurements with increasing precision • Select apparatus for a range of tasks plan to • Use apparatus effectively begin to make repeat observations and measurements • Measure quantities with precision using fine – scale divisions select and use information effectively • Make enough measurements	• Measure quantities with precision using fine – scale divisions • Select and use information effectively • Make enough measurements or observations for the required task

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						or observations for the required task range systematically	
	EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Considering Evidence and Evaluating	•	• Make simple comparisons and groupings • Say what has happened • Say whether what has happened was what they expected	• Say what has happened • Say what their observations show and whether it was what they expected • Begin to draw simple conclusions and explain what they did • Begin to suggest improvements in their work	• Begin to offer explanations for what they see and communicate in a scientific way what they have found out • Begin to identify patterns in recorded measurements • Suggest improvements in their work • Evaluate their findings	• Predict outcomes using previous experience and knowledge and compare with actual results • Begin to relate their conclusions to scientific knowledge and understanding • Suggest improvements in their work, giving reasons	• Make predictions based on their scientific knowledge and understanding • Draw conclusions that are consistent with the evidence • Relate evidence to scientific knowledge and understanding • Offer simple explanations for any differences in their results • Make practical suggestions about how their working methods could be improved	• Make reasoned suggestions on how to improve working methods • Show how interpretation of evidence leads to new ideas • Explain conclusions, showing understanding of scientific ideas